



Consolidated Laboratories, Inc.

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REPORT NO. 17620

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October 18, 2016

TEST REPORT

SAF-T-FLO
Chemical Injection
4071 E. La Palma Ave., Suite #L
Anaheim, CA 92807

Subject: Pressure Test on 1 Specimen Each of SAF-T-FLO P/N's EB-120-B-P, EB-120-S-S, CI-050-B-P, SP-050-S-P, EB-130-B-P, EB-130-S-S, CI-075-B-P, EB-145-B-P, EB-145-B-S, EB-145-S-P, EB-145-S-S, EB-162-C-P, EB-168-S-P, EB-168-S-S, EB-132-B-P, EB-146-B-P, EB-146-B-S, EB-146-S-P, EB-146-S-S, EB-164-C-P, EB-155-S-P, EB-155-S-S, EB-147-S-P, EB-147-S-S, EB-191-B-P, EB-191-B-S, EB-148-S-P, EB-148-S-S, EB-159-B-P, EB-159-B-S, EB-159-S-P, EB-159-S-S, EB-165-C-P, EB-150-S-P, EB-150-S-S, EB-160-B-P, EB-160-B-S, EB-153-S-P, EB-153-S-S, EB-151-S-P and EB-151-S-S, Chemical Injection Equipment

This will certify that the above units were subjected to the Pressure Test of the referenced documents in this Laboratory in the manner and with results as described below:

1. **REFERENCES**

- 1.1 Purchase Order No. 16-1459, dated 9/13/2016, from SAF-T-FLO, Chemical Injection
- 1.2 E-Mail dated Tuesday, March 22, 2016, from Matt Weyant of SAF-T-FLO

2. **PURPOSE** -- The purpose of this program was to subject the specimens to the Pressure Test of Reference 1.2 and Verbal Instructions from Matt Weyant of SAF-T-FLO. The units were to be visually inspected for physical damage and returned to SAF-T-FLO for further evaluation at the completion of the test.

3. **SUMMARY** -- The units were subjected to the Pressure Test as required. The procedures and results of the test are shown on the laboratory instruction/data sheets, which are reproduced as subsequent pages of this report. Examination of the units after completion of the test disclosed no visible evidence of damage or deterioration as a result of the test conditions, except as noted herein. The threaded connector for P/N EB-145-S-S bent during testing without loss of pressure. The collar of P/N EB-132-B-P broke during the testing, also without

(Continued on next page.)

Test By: J. J. Garcia	
Report By: D. D. Huff	

Prepared By: 
Dale D. Huff, Test Engineer

Approved By: 
M. L. Hitchcock, General Manager





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3. **SUMMARY** (Continued)

loss of pressure. P/N's EB-165-C-P and EB-160-B-P burst at pressures of 280 and 270 PSIG, respectively, during the Burst Pressure portion of the test. P/N's EB-146-B-P, EB-146-S-P, EB-146-S-S and EB-164-C-P burst at 150 PSIG during the Limit Chain Test portion of the test. The units were returned to SAF-T-FLO for further evaluation at the completion of the test.

4. **TEST EQUIPMENT** -- The following items of test equipment, calibrated in accordance with ISO 10012-1 and ANSI/NCSL Z 540-1, by Consolidated Laboratories or a commercial facility, utilizing reference standards (or interim standards) whose calibrations have been certified as being traceable to the National Institute of Standards and Technology, were used to conduct the tests. Certifications of all calibrations performed are retained on file in the Consolidated Laboratories Calibration Department, and are available for inspection upon request by customer representatives.

—Digital Timer: Control Company Dual Event Timer Model 5014, S/N 91061661, ID/N 863.
Range from 1 sec. - 100 hr. x 1 sec., ±.01% of reading. Calib. due 9-23-17, 12 mos.

—Pressure Gauge: Acco Helicoid, 4½" Test Gauge, ID/N 120, 0 - 1500 x 10 PSIG, ±.5%.
Calib. due 1-18-17, 6 mos.

—Pressure Gauge: 3D Instruments, 4" Test Gauge, S/N 8705973N, ID/N 136, 0 - 600 x 2 PSIG, ±.25%. Calib. due 12-22-16, 6 mos.



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LAB DATA SHEET

Part No. Various (See Tables) S/N Sample 1 - 44 Job 17620
Description Chemical Injection Equipment Co. SAF-T-FLO
Test 1.0

TEST:	PRESSURE	Start	Cptd
To Spec:	E-Mail dated 3/22/16; Verbal Instructions	Date	10/11/16
		Test By	JG
		Photo	✓

Test Medium: Water (H₂O)

1. Install the unit under test in a suitable test setup capable of reading the inlet pressure with the outlet blocked and the packing nut torqued to a value designated by the SAF-T-FLO representative. Connect the inlet of the unit to the pressure source.
2. Gradually increase the pressure to the Operating Pressure indicated in the table, below, and, if necessary, tighten the packing nut. Maintain pressure for a period of thirty (30) seconds while monitoring for evidence of leakage or restraint system failure. Record the results in the table.
3. Gradually increase the pressure to the Proof Pressure indicated in the table and, if necessary, tighten the packing nut. Maintain pressure for a period of thirty (30) seconds while monitoring for evidence of leakage or restraint system failure. Record the results in the table.
4. Gradually increase the pressure to the Burst Pressure indicated in the table and, if necessary, tighten the packing nut. Maintain pressure for a period of three (3) minutes. Release pressure and observe for evidence of leakage or restraint system failure. Record the results in the table.
5. Release the 2-link chain and, as rapidly as possible, increase the pressure to the Operating (Limit Chain Test) Pressure indicated in the table. Observe for evidence of restraint system failure. Record the results in the table.

P/N	Operating Pressure (PSIG)	Leak. or Failure? (Yes/No)	Proof Pressure (PSIG)	Leak. or Failure? (Yes/No)	Burst Pressure (PSIG)	Leak. or Failure? (Yes/No)	Limit Chain Test Press. (PSIG)	Res. Sys. Failure? (Yes/No)
EB-120-B-P	150	NO	225	NO	300	NO	150	NO
EB-120-S-S	150	NO	225	NO	300	NO	150	NO
CI-050-B-P	150	NO	225	NO	300	NO	150	NO
SP-050-S-P	150	NO	225	NO	300	NO	150	NO
EB-130-B-P	150	NO	225	NO	300	NO	150	NO
EB-130-S-S	150	NO	225	NO	300	NO	150	NO
CI-075-B-P	150	NO	225	NO	300	NO	150	NO
EB-145-B-P	150	NO	225	NO	300	NO	150	NO
EB-145-B-S	150	NO	225	NO	300	NO	150	NO
EB-145-S-P	150	NO	225	NO	300	NO	150	NO
EB-145-S-S	150	NO	225	NO	300	NO	150	NO
EB-162-C-P	150	NO	225	NO	300	NO	150	NO
EB-168-S-P	250	NO	375	NO	500	NO	250	NO
EB-168-S-S	250	NO	375	NO	500	NO	250	NO
EB-132-B-P	150	NO	225	NO	300	NO	150	NO
EB-146-B-P	150	NO	225	NO	300	NO	150	YES
EB-146-B-S	150	NO	225	NO	300	NO	150	NO

(Continued on next page.)



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LAB DATA SHEET

Part No. Various (See Tables) S/N _____ Sample 1 - 44 Job 17620
Description Chemical Injection Equipment Co. SAF-T-FLO
Test 1.1

TEST: PRESSURE (Continued)
To Spec: E-Mail dated 3/22/16 & Verbal Instructions

5. (Continued)

P/N	Operating Pressure (PSIG)	Leak. or Failure? (Yes/No)	Proof Pressure (PSIG)	Leak. or Failure? (Yes/No)	Burst Pressure (PSIG)	Leak. or Failure? (Yes/No)	Limit Chain Test Press. (PSIG)	Res. Sys. Failure? (Yes/No)
EB-146-S-P	150	NO	225	NO	300	NO	150	YES
EB-146-S-S	150	NO	225	NO	300	NO	150	YES
EB-164-C-P	150	NO	225	NO	300	NO	150	YES
DISCONTINUED		DISCONTINUED						
EB-155-S-S	250	NO	375	NO	500	NO	250	NO
DISCONTINUED		DISCONTINUED						
EB-147-S-S	250	NO	375	NO	500	NO	250	NO
EB-191-B-P	150	NO	225	NO	300	NO	150	NO
EB-191-B-S	150	NO	225	NO	300	NO	150	NO
DISCONTINUED		DISCONTINUED						
EB-148-S-S	250	NO	375	NO	500	NO	250	NO
EB-159-B-P	150	NO	225	NO	300	NO	150	NO
EB-159-B-S	150	NO	225	NO	300	NO	150	NO
EB-159-S-P	150	NO	225	NO	300	NO	150	NO
EB-159-S-S	150	NO	225	NO	300	NO	150	NO
DISCONTINUED		DISCONTINUED						
EB-150-S-S	250	NO	375	NO	500	NO	250	NO
EB-160-B-P	150	NO	225	NO	300	YES	150	NO
EB-160-B-S	150	NO	225	NO	300	NO	150	NO
DISCONTINUED		DISCONTINUED						
EB-153-S-S	250	NO	375	NO	500	NO	250	NO
DISCONTINUED		DISCONTINUED						
EB-151-S-S	250	NO	375	NO	500	NO	250	NO

6. List test equipment used on the Test Equipment List, attached, and record the ID/N's below.

Test Equipment ID/N's: 136, 120, 863

Comments: UNIT # EB-160-B-P BURST AT 270 PSIG, UNIT # EB-165-C-P BURST AT 280 PSIG, UNIT # EB-146-B-P BURST AT LIMIT CHAIN TEST 150 PSIG, UNIT # EB-146-S-P BURST AT LIMIT CHAIN TEST 150 PSIG, UNIT # EB-164-C-P BURST AT LIMIT CHAIN TEST 150 PSIG



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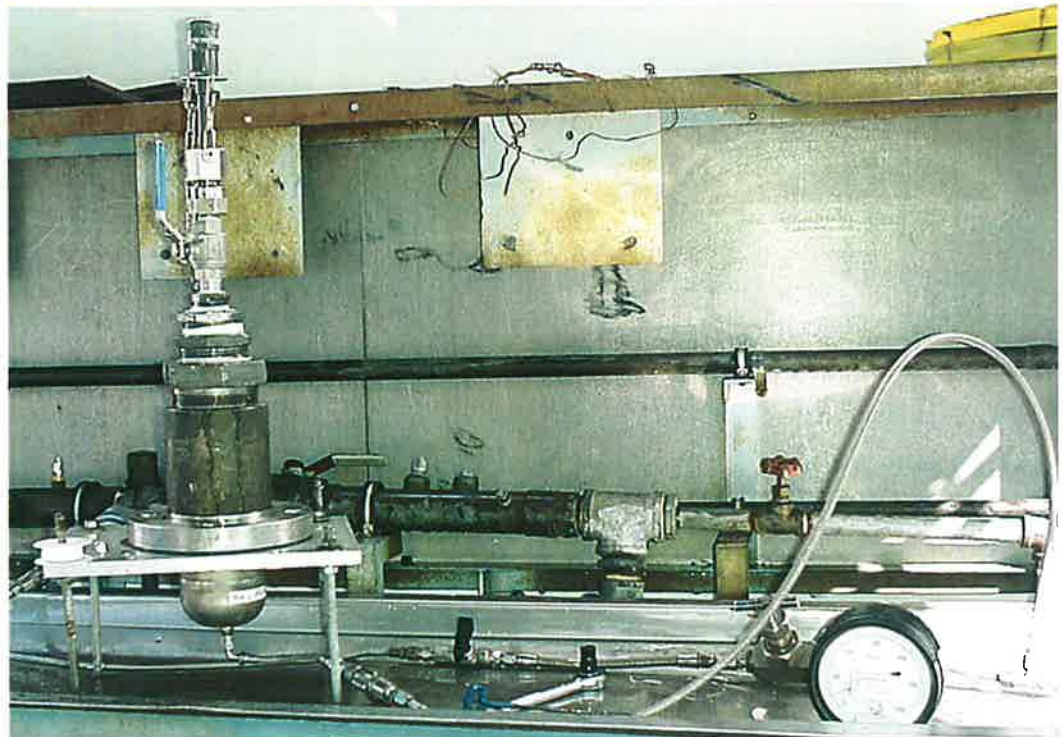
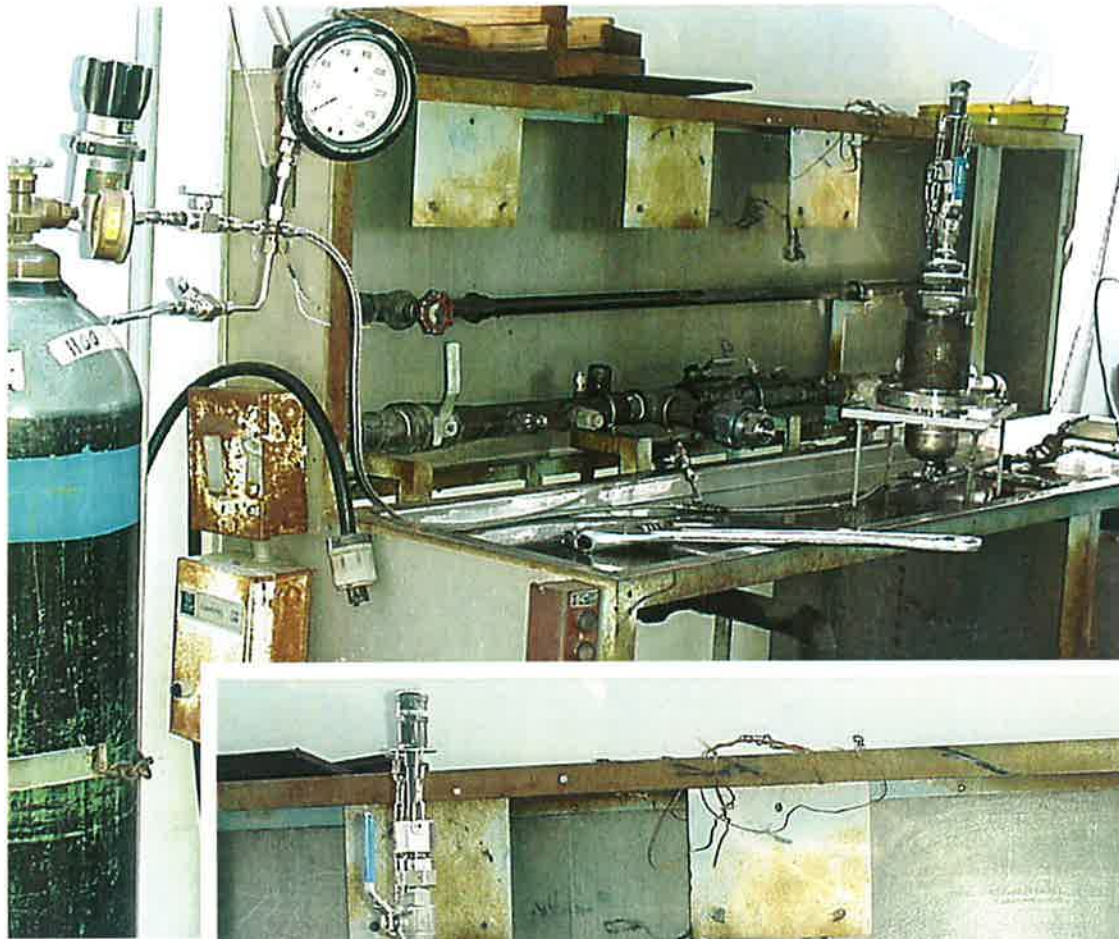
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PHOTO 1 & 2

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PRESSURE TEST SETUP



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PHOTO 3 - 5

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PRESSURE TEST SETUP **(Various P/N's during Operating Pressure portion)**



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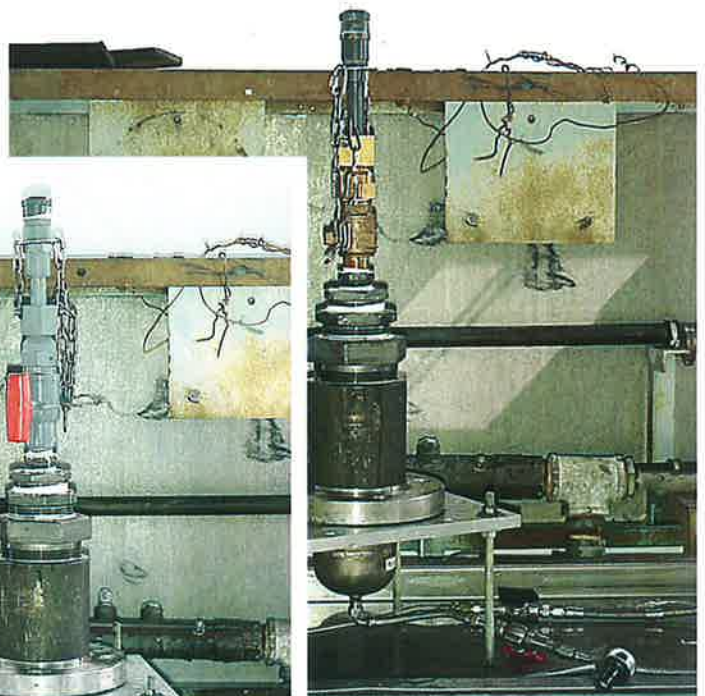
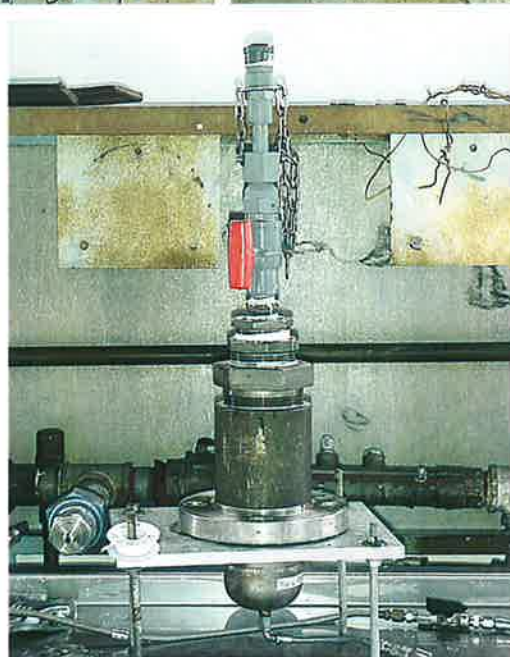
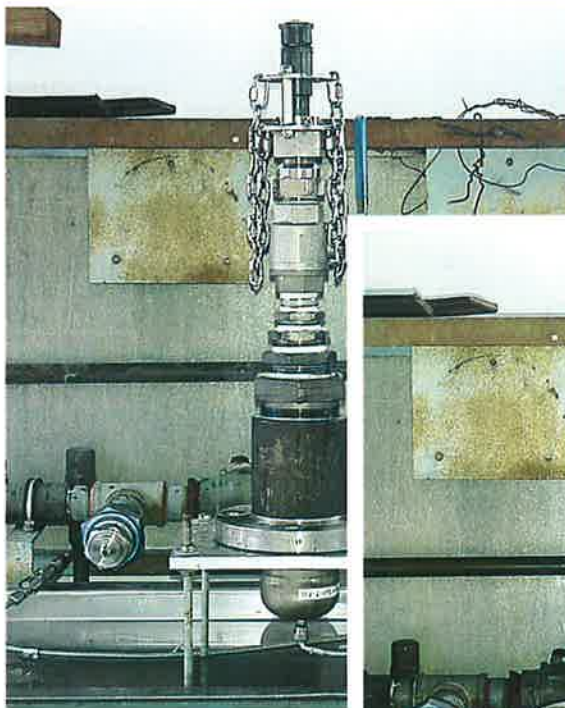
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PRESSURE TEST SETUP (Various P/N's during Proof Pressure portion)





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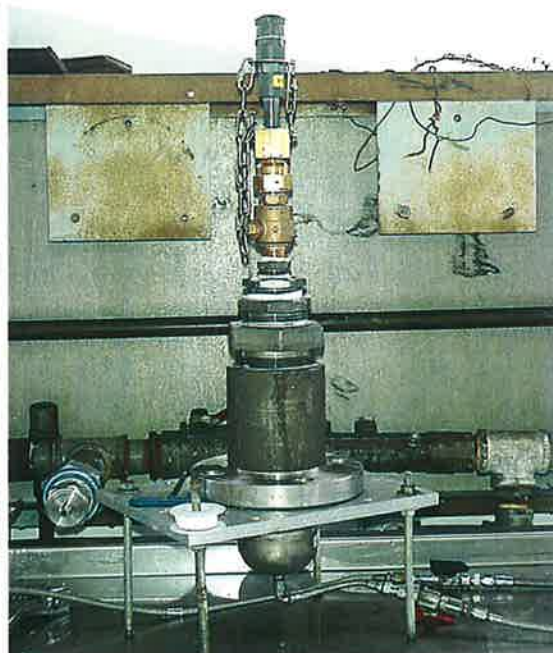
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PHOTO 11 - 16

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PRESSURE TEST SETUP **(Various P/N's during Burst Pressure portion)**



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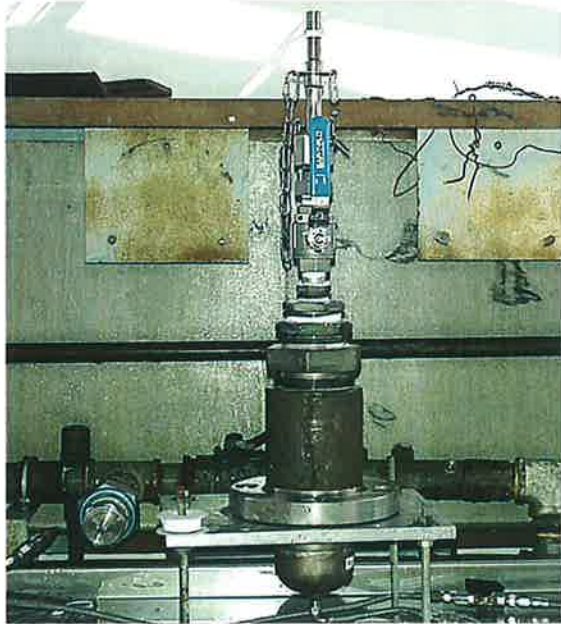
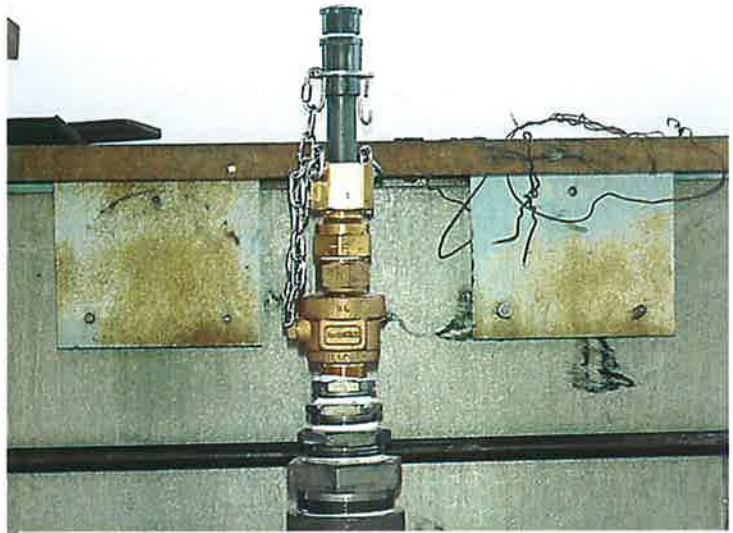
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TEST REPORT

PRESSURE TEST SETUP (Various P/N's during Limit Chain Test portion)



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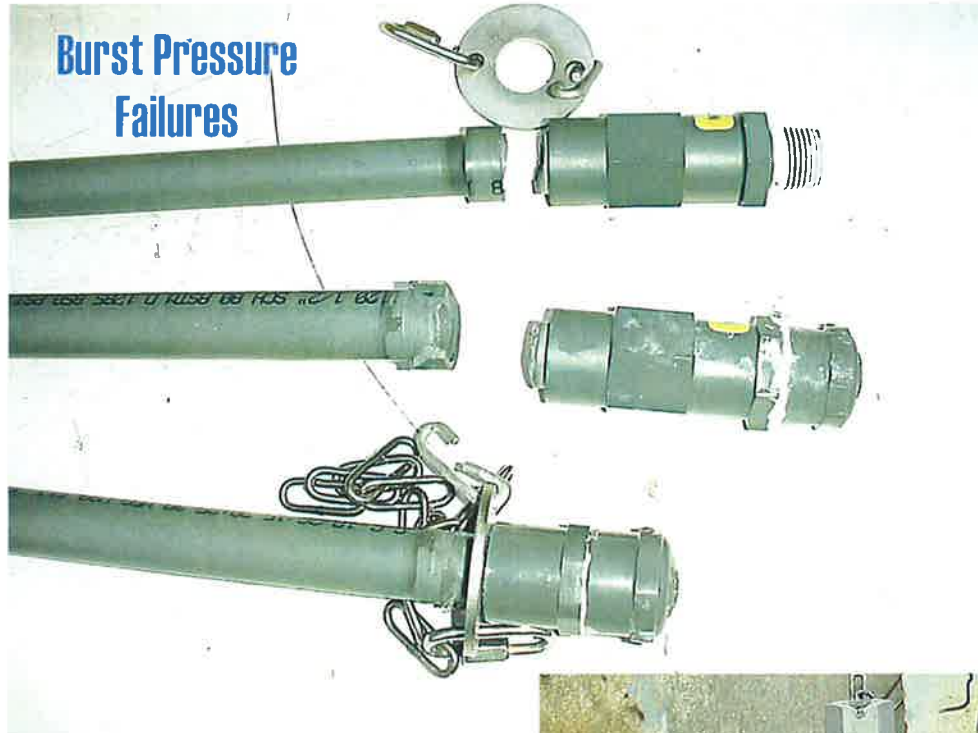
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PHOTO 21 & 22

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PRESSURE TEST SETUP (Failures)



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